

IN THE SPECIFICATION:

Please replace paragraphs 4 and 20 with the following paragraphs:

[0004] In principal, steps a) and b) can be reversed (see annexed claim [[2]] 9) although the above is the presently preferred method. Other preferred features of the method of the invention are described in claims 3 to 9.

[0020] In comparison with this, we present the NEP curves from a detector structure using quite conservative collector parameters. We assume collection over a 450 micron aperture (on a 500 micron pitch) down onto a detector contained within a 100 micron aperture at its base. A collection efficiency of only 25% is assumed. Two detector designs have been modeled, one as in figure 2b, the other being a rather simpler design of a membrane detector with slots cut in it to reduce its thermal conductance (figure 2c). The details of the type of detector structure are showing in Figure 4a. In both cases it is assumed that the detector consists of 1 micron thick layer 20 of PZT30/70 on a 1.7 micron thick SiO₂ membrane 21, coated with 377 ohms/sq. metal 22, that acts as an interference absorber. The SiO₂ layer acts as an interference absorber consisting of a $[\square] \lambda/4$ dielectric layer ($[\square] \lambda=10\mu\text{m}$). A reflective electrode 23 is positioned between the PZT layer and SiO₂ membrane 21 and a rear electrode 24 lies on the back of the PZT layer 20. Alternatively, the dielectric in the absorber could be a 1.1 μm thick layer 20 of the ferroelectric itself (figure 4b) covered with a 377 ohms/sq. metal 26. This would provide a further improvement in thermal sensitivity and reduction in thermal conductance. The results for the NEP predictions for both detector designs are very encouraging (see figure 3). At least an order-of-magnitude improvement (reduction) in NEP is predicted. A higher collector efficiency would lead to a proportionate increase in performance. Alternative materials to use in the detector element would be lead scandium tantalate or a copolymer of polyvinylidene fluoride and trifluoroethylene (PVDF/TrFE) with between 55 and 85% polyvinylidene fluoride.